WHAT IS CLAIMED IS:

1. A method of calculating a net present value of an average spot basket option, comprising:

calculating a first moment of a sum of spot values $S_j(t_i)$ of all underlyings of a basket;

calculating a second moment of the sum of spot values $S_j(t_i)$ of all underlyings of the basket, wherein the first and second moments are approximate log normal distributions; and

applying a Black-Scholes formalism to the first and second moments to determine the net present value of an average spot basket option.

2. The method of claim 1, wherein the first moment of the sum of spot values $S_j(t_i)$ of all underlyings of a basket is given by:

$$\langle M \rangle = \frac{1}{N}\sum_{j=1}^{N_A} S(t_E)e^{g_j(t_{m+1}-t_E)}\Sigma_j$$, if $t_E<t_1$ then set m=0.

3. The method of claim 2, wherein the first moment is a modified forward spot, $\widetilde{F}$, for all underlyings.

4. The method of claim 1, wherein the second moment of the sum of spot values $S_j(t_i)$ of all underlyings of a basket is given by:

$$\langle M^2 \rangle = \frac{1}{N^2}\sum_{j=1}^{N_A}\sum_{k=1}^{N_A} S_j(t_E)S_k(t_E)\,e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(t_{m+1}-t_E)}\Sigma_{jk}$$, if $t_E<t_1$ then set $m=0$.

5. The method of claim 1, further comprising:

calculating a modified strike value.

6. The method of claim 5, wherein the modified strike value is given by:

$\widetilde{K} = K - \sum_{j=1}^{N_A}\frac{1}{N}\sum_{i=1}^{m} S_j(t_i)$, wherein t_m is latest instant with an already fixed spot.

7. The method of claim 1, further comprising:

calculating a first modified normal distribution function.

8. The method of claim 7, wherein the first modified normal distribution function is given by:

$$\mathrm{N}(+\tilde{d}_1)\text{, wherein } \tilde{d}_1 = \frac{\ln\frac{\tilde{F}}{\tilde{K}}}{\nu} + \frac{\nu}{2}.$$

9. The method of claim 1, further comprising:

calculating a second modified normal distribution function.

10. The method of claim 9, wherein the second modified normal distribution function is given by:

$$\mathrm{N}(+\tilde{d}_2)\text{, wherein } \tilde{d}_2 = \tilde{d}_1 - \nu.$$

11. A method of determining a net present value (NPV) of one of a call and a put (V_{call} and V_{put}, respectively) of an Average Spot Basket Option as a function of a predetermined horizon date (t_H), comprising:

reading an evaluation date into a memory;

reading contract data for a set of assets belonging to a basket into the memory;

reading market data for the set of assets belonging to the basket into the memory;

reading an indication of whether the NPV is designated for a call or a put into the memory;

calculating the NPV according to the following equations:

$$\left.\begin{aligned} V_{call}(t_H) &= e^{-r(t_H,T)(T-t_H)}\left[+\tilde{F}\,\mathrm{N}(+\tilde{d}_1) - \tilde{K}\,\mathrm{N}(+\tilde{d}_2)\right] \\ V_{put}(t_H) &= e^{-r(t_H,T)(T-t_H)}\left[-\tilde{F}\,\mathrm{N}(-\tilde{d}_1) + \tilde{K}\,\mathrm{N}(-\tilde{d}_2)\right] \end{aligned}\right\} \quad \text{for } t_H \le T \text{ and } \tilde{K} > 0$$

$$\left.\begin{aligned} V_{call}(t_H) &= e^{-r(t_H,T)(T-t_H)}\left[+\widetilde{F}-\widetilde{K}\right] \\ V_{put}(t_H) &= 0 \end{aligned}\right\} \qquad \text{for } t_H \le T \text{ and } \widetilde{K} \le 0$$

$$V_{call/put}(t_H) = 0, \qquad \text{for } t_H > T$$

where

$$\widetilde{d}_1 = \frac{\ln\dfrac{\widetilde{F}}{\widetilde{K}}}{\nu} + \frac{\nu}{2}, \quad \widetilde{d}_2 = \widetilde{d}_1 - \nu$$

$$\widetilde{K} = K - \sum_{j=1}^{N_A} \frac{1}{N} \sum_{i=1}^{m} S_j(t_i),$$ where t_m is latest instant with an already fixed spot

$$\widetilde{F} = \langle M \rangle$$

$$\nu^2 = \ln\langle M^2 \rangle - 2\ln\langle M \rangle$$

$$\langle M \rangle = \frac{1}{N} \sum_{j=1}^{N_A} S_j(t_E) e^{g_j(t_{m+1}-t_E)} \Sigma_j,$$ if $t_E < t_1$ then set $m=0$

$$\Sigma_j = \frac{1-e^{g_j(N-m)h}}{1-e^{g_j h}}, \text{ if } |g_j h| > \varepsilon$$

otherwise

$$\Sigma_j = \sum_{i=0}^{N-m-1} e^{g_j h i}$$

$$\langle M^2 \rangle = \frac{1}{N^2} \sum_{j=1}^{N_A} \sum_{k=1}^{N_A} S_j(t_E) S_k(t_E) e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(t_{m+1}-t_E)} \Sigma_{jk},$$ if $t_E < t_1$, then set $m=0$

$$\Sigma_{jk} = \frac{1-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(N-m)h}}{\left(1-e^{g_jh}\right)\left(1-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h}\right)} - \frac{e^{g_j(N-m)h}-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(N-m)h}}{\left(1-e^{g_jh}\right)\left(1-e^{(g_k+\rho_{jk}\sigma_j\sigma_k)h}\right)} + \frac{e^{g_kh}-e^{g_k(N-m)h}}{\left(1-e^{g_kh}\right)\left(1-e^{(g_j+\rho_{jk}\sigma_j\sigma_k)h}\right)} - \frac{e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h}-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(N-m)h}}{\left(1-e^{(g_j+\rho_{jk}\sigma_j\sigma_k)h}\right)\left(1-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h}\right)}, \text{ if } \begin{array}{l} |g_jh| > \varepsilon \cap \\ |g_kh| > \varepsilon \cap \\ |(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h| > \varepsilon \cap \\ |(g_j+\rho_{jk}\sigma_j\sigma_k)h| > \varepsilon \cap \\ |(g_k+\rho_{jk}\sigma_j\sigma_k)h| > \varepsilon \end{array}$$

otherwise

$$\Sigma_{jk} = \sum_{i=0}^{N-m-1}\sum_{l=i}^{N-m-1} e^{g_jhl}e^{(g_k+\rho_{jk}\sigma_j\sigma_k)hi} + \sum_{i=1}^{N-m-1}\sum_{l=0}^{i-1} e^{(g_j+\rho_{jk}\sigma_j\sigma_k)hl}e^{g_khi}.$$

$h = \dfrac{t_N - t_{m+1}}{N-m-1}$, if N-m>1, otherwise set $h = 1$

$$g_j = r(t_E,T) - q_j(t_E,T),\ j = 1,\ldots,N_A$$

where

N(x)	normal cumulative distribution
$r(t_1,t_2)$	riskless domestic currency interest rate for the time span $t_1 \ldots t_2$
$q_j(t_1,t_2)$	dividend rate, or foreign currency interest rate for the time span $t_1 \ldots t_2$
$S_j(t)$	spot price of the j-th underlying asset, $j = 1,\ldots,N_A$
σ_j	volatility of the j-th underlying asset
ρ_{jk}	correlation coefficient between the assets j and k (the correlation is related to the logarithm of the asset prices)
K	strike price
ε	is a predetermined limit; and

displaying the calculated net present value on a display device.

12. The method of claim 11, further comprising:

comparing the determined net present value to a predetermined value; and

if the net present value is greater than the predetermined value, then displaying a first message on an output device, and

if the net present value is less than the predetermined value, then displaying a second message on the output device.

13. A system for determining a net present value of one of a call and a put (V_{call} and V_{put}, respectively) of an Average Spot Basket Option as a function of a predetermined horizon date (t_H), comprising:

a memory that stores data that is exercised in connection with determining the net present value;

a processor that executes code to determine the net present value in accordance with the equations:

$$\left.\begin{array}{l} V_{call}(t_H) = e^{-r(t_H,T)(T-t_H)}\left[+\widetilde{F}\,\mathrm{N}(+\widetilde{d}_1) - \widetilde{K}\,\mathrm{N}(+\widetilde{d}_2)\right] \\ V_{put}(t_H) = e^{-r(t_H,T)(T-t_H)}\left[-\widetilde{F}\,\mathrm{N}(-\widetilde{d}_1) + \widetilde{K}\,\mathrm{N}(-\widetilde{d}_2)\right] \end{array}\right\} \text{ for } t_H \le T \text{ and } \widetilde{K} > 0$$

$$\left.\begin{array}{l} V_{call}(t_H) = e^{-r(t_H,T)(T-t_H)}\left[+\widetilde{F} - \widetilde{K}\right] \\ V_{put}(t_H) = 0 \end{array}\right\} \qquad \text{for } t_H \le T \text{ and } \widetilde{K} \le 0$$

$$V_{call/put}(t_H) = 0, \qquad \text{for } t_H > T$$

where

$$\widetilde{d}_1 = \frac{\ln\dfrac{\widetilde{F}}{\widetilde{K}}}{v} + \frac{v}{2}, \quad \widetilde{d}_2 = \widetilde{d}_1 - v$$

$$\widetilde{K} = K - \sum_{j=1}^{N_A} \frac{1}{N} \sum_{i=1}^{m} S_j(t_i),$$ where t_m is latest instant with an already fixed spot

$$\widetilde{F} = \langle M \rangle$$

$$\nu^2 = \ln\langle M^2\rangle - 2\ln\langle M\rangle$$

$$\langle M\rangle = \frac{1}{N}\sum_{j=1}^{N_A} S_j(t_E)e^{g_j(t_{m+1}-t_E)}\Sigma_j,$$ if $t_E<t_1$ then set $m=0$

$$\Sigma_j = \frac{1-e^{g_j(N-m)h}}{1-e^{g_jh}}, \text{ if } |g_jh|>\varepsilon$$

otherwise

$$\Sigma_j = \sum_{i=0}^{N-m-1} e^{g_jhi}$$

$$\langle M^2\rangle = \frac{1}{N^2}\sum_{j=1}^{N_A}\sum_{k=1}^{N_A} S_j(t_E)S_k(t_E)e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(t_{m+1}-t_E)}\Sigma_{jk},$$ if $t_E<t_1$, then set $m=0$

$$\begin{aligned}\Sigma_{jk} = & \frac{1-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(N-m)h}}{\left(1-e^{g_jh}\right)\left(1-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h}\right)} \\ & -\frac{e^{g_j(N-m)h}-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(N-m)h}}{\left(1-e^{g_jh}\right)\left(1-e^{(g_k+\rho_{jk}\sigma_j\sigma_k)h}\right)} \\ & +\frac{e^{g_kh}-e^{g_k(N-m)h}}{\left(1-e^{g_kh}\right)\left(1-e^{(g_j+\rho_{jk}\sigma_j\sigma_k)h}\right)} \\ & -\frac{e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h}-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)(N-m)h}}{\left(1-e^{(g_j+\rho_{jk}\sigma_j\sigma_k)h}\right)\left(1-e^{(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h}\right)}\end{aligned}, \text{ if } \begin{array}{l}|g_jh|>\varepsilon\cap \\ |g_kh|>\varepsilon\cap \\ |(g_j+g_k+\rho_{jk}\sigma_j\sigma_k)h|>\varepsilon\cap \\ |(g_j+\rho_{jk}\sigma_j\sigma_k)h|>\varepsilon\cap \\ |(g_k+\rho_{jk}\sigma_j\sigma_k)h|>\varepsilon\end{array}$$

otherwise

$$\Sigma_{jk} = \sum_{i=0}^{N-m-1}\sum_{l=i}^{N-m-1} e^{g_jhl}e^{(g_k+\rho_{jk}\sigma_j\sigma_k)hi} + \sum_{i=1}^{N-m-1}\sum_{l=0}^{i-1} e^{(g_j+\rho_{jk}\sigma_j\sigma_k)hl}e^{g_khi}.$$

$$h = \frac{t_N - t_{m+1}}{N-m-1},$$ if N-m>1, otherwise set $h=1$

$$g_j = r(t_E,T) - q_j(t_E,T),\ j=1,\ldots,N_A$$

where

N(x)	normal cumulative distribution
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σ_j	volatility of the j-th underlying asset
ρ_{jk}	correlation coefficient between the assets j and k (the correlation is related to the logarithm of the asset prices)
K	strike price
ε	is a predetermined limit; and

an output device that displays the net present value.